

WHAT IS CLAIMED IS

1. An isolated polynucleotide encoding a polypeptide controlling the flowering time of plants, wherein the polypeptide comprising an amino acid sequence having at least 70% sequence homology to an amino acid sequence of SEQ ID NO: 2, or comprising the amino acid sequence of SEQ ID NO: 2.
2. The polynucleotide of Claim 1, wherein the polynucleotide has the sequence of SEQ ID NO: 1 or SEQ ID NO: 3.
3. The polynucleotide of Claim 1, wherein the polynucleotide has the activity of repressing flowering-promoting gene *AGL20*.
4. An antisense oligonucleotide of the polynucleotide of Claim 1.
5. A recombinant vector comprising the polynucleotide of Claim 1.
6. A cell comprising the polynucleotide of Claim 1.
7. A plant comprising the polynucleotide of Claim 1.
8. A plant tissue or seed derived from the plants of Claim 7.
9. A method for delaying the flowering time of plants, comprising the step of introducing the polynucleotide of Claim 1 into the plants, wherein the

polynucleotide is operably linked to an expression control sequence.

10. The method of Claim 9, wherein the plants is monocotyledon or dicotyledon.

5

11. A method for promoting the flowering time of plants, which comprising the steps of introducing an antisense molecule into the plants.

12. The method of Claim 11, wherein the antisense molecule is selected from the group consisting of triplex agent, ribozyme, RNAi, and antisense nucleic acid.

10

13. The method of Claim 11, wherein the plants is monocotyledon or dicotyledon.

15

14. A method for identifying a compound controlling the flowering time of plants, comprising the steps of:

culturing a recombinant cell comprising the polynucleotide of Claim 1 and a candidate substance; and

20

measuring the effect of the candidate substance on the expression of the polynucleotide.

15. A method for screening a gene controlling the flowering time of plants, which comprises using the polynucleotide of Claim 1 as a primer or probe.

25